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APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/974,710	10/09/2001	Peggy-Jean P. Flanigan	13110-001001

CONFIRMATION NO. 7863

FORMALITIES LETTER

OC000000007082198

H. SANDERS GWIN, JR.
Fish & Richardson P.C., P.A.
Suite 3300
60 South Sixth Street
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03/04/2002 EEKUBAY1 00000033 133723 09974710

01 FC:101 740.00 CH
02 FC:103 630.00 CH
03 FC:102 336.00 CH
04 FC:105 130.00 CH

Date Mailed: 11/16/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **740** *to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).*
- Total additional claim fee(s) for this application is $966.
  - **$630** for **35** total claims over 20.
  - **$336** for **4** independent claims over 3 .
- The oath or declaration is missing.
  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of $130 for a non-small entity, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is $ 1836.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202
PART 2 - COPY TO BE RETURNED WITH RESPONSE

COPY OF PAPERS
ORIGINALLY FILED

PATENT
Docket No. 55526US003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Peggy-Jean P. Flanigan, Mietek H. Mazurek, Peter A. Stark, Patrick R. Fleming, Janice R. Manore, Eric J. Borchers

Serial No.: 09/974,710
Filed: October 9, 2001

Group Art Unit: 1772

Examiner:

For: Laminates with Structured Layers

Response to Notice to File Missing Parts of Nonprovisional Application

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

This is in response to the Notice to File Missing Parts of Nonprovisional Application. Applicants have petitioned for a one (1) month extension of time, thereby extending the time to respond from January 16, 2002 to February 16, 2002. Please charge any additional fees due in connection with this Amendment or credit any overpayment to Deposit Account No. 13-3723.

(1) The Notice to File Missing Parts indicated the statutory basic filing fee of $740 plus additional claim fees of $966 for a total due of $1706, was missing. Please charge the required filing fees and additional claims fees to Deposit Account No. 13-3723.

(2) The Notice to File Missing Parts indicated the absence of the oath or declaration. Enclosed herewith is a fully executed Declaration, Power of Attorney and Petition. Please charge the requisite fees of $130 to Deposit Account No. 13-3723. A duplicate of this request is enclosed.

(3) The application was deemed to be informal because informal drawings were submitted with the original filing. Enclosed please find the formal drawings that comply with 37 C.F.R. § 1.84.

Pursuant to 37 C.F.R. § 1.81, I hereby certify that this correspondence is being deposited on the date indicated below with the United States Postal Service as First Class Mail and addressed to the Commissioner for Patents, Washington DC 20231:

13 February 2002
Date

Signed: Carolyn V. Peters
Carolyn V. Peters, Reg. No. 33,271

(4) Upon review of the informal drawings during the preparation of the formal drawings, it was discovered that numbers that were present on the figures were not present in the specification. Further, numbers in the specification were missing from the drawings. Finally, some of the numbers were duplicates of others. These errors have been remedied on the enclosed set of formal drawings. Although we know that amendments to the Specifications are not a matter of right, we respectfully request the Examiner replace pages 16-18 of the originally filed specification with the enclosed replacement pages 16-18. As a courtesy, Applicants have included a redlined copy for the Examiner's review.

Applicants believe proposed corrections to the Figures, in particular Figures 9A to 12C, conforming the drawings with the specification and the specification to the drawings are appropriate and that no new matter is being inserted by entering these corrections.

Respectfully Submitted,

Date: 13 February 2002

By: Carolyn V. Peters
Carolyn V. Peters
Registration No. 33,271

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Replacement Pages

and the like. Depending on the type of adhesive, the adhesive may be solidified or physically cross-linked upon cooling the laminate to room temperature. After curing, cross-linking, or solidifying the adhesive, the structures on the surface of the adhesive layer substantially retain their shape over time. The selection of the adhesive plays a role in determining the long-term properties of the structured adhesive layer(s). The process can be scaled up as a continuous process utilizing the methods described in U.S. Patent No. 6,123,890.

Additional membrane layers, transfer liners, release liners, adhesive layers (structured and non-structured), polymer films (structured and non-structured), and the like, can be laminated to the adhesive construction using lamination techniques that are well known to those skilled in the art.

Lamination of the cap layer to the structured surface of the adhesive and/or lamination of multiple structured layers creates a plurality of encapsulated reservoirs or channels within the adhesive coated article. The amount of void volume contained in the encapsulated reservoirs or channels can be tailored based on the adhesive composition and size and shape of the tooling used to generate the structures of each layer.

FIGS. 9-11 show two general methods for fabricating articles with encapsulated reservoirs or channels and non-structured surfaces for adhering to a substrate. FIG. 9 illustrates a method for making an adhesive layer for use in the constructions shown in FIGS. 10 and 11.

Referring to FIGS. 9A-9C, a structured adhesive layer 910 may be prepared by melting or extruding or solvent-coating an adhesive 901 onto a structured molding tool 997 and then laminating the structured adhesive 910 to a backing 920. Typically, a solventless adhesive 901 is pressed between the molding tool 997 and the backing 920 (e.g., a non-structured liner) under pressure at an elevated temperature such that the adhesive 901 flows. The press is cooled while maintaining pressure, and, as shown in FIG. 9B, the laminate 905 is subsequently removed from the molding tool 997 and cured or cross-linked using UV irradiation to generate the laminate 905 (FIG. 9C).

Referring to FIGS. 10A-10B, the laminate 905 can be further laminated to a cap layer 950 or to a non-structured adhesive layer to form an article 960 (FIG. 10B), which forms a plurality of encapsulated reservoirs or channels 970. If the cap layer 950 is a single structured adhesive layer, this method can be used to form the constructions illustrated in FIGS 6 and 7.

Referring to FIGS. 11A-11C, a method is shown that provides a laminate 905 including a backing 920 having a structured adhesive layer 910 thereon. The exposed adhesive surface 910A is laminated to a cap layer 980, such as, for example, a primed polyester backing. The resulting laminate 990 is then removed from the original backing 920 (FIG. 11B), exposing a non-structured adhesive surface 925. The laminate 990 includes a non-structured adhesive surface 925 suitable for contact with a substrate, a structured surface in contact with a cap layer 980, and a plurality of encapsulated reservoirs or channels 975 (FIG. 11C). This basic construction can be further laminated to, for example, a single structured adhesive layer to form the construction illustrated in FIG. 6A.

Referring to FIG. 12A, a method is shown for fabricating the multi-layer construction depicted in FIG. 6A. The method includes laminating the laminate 990 (FIG. 11C) to a second laminate 905 (FIG. 10A), both made according to the methods described above. The resulting multi-layer adhesive coated article includes a plurality of reservoirs or channels 940 within the article construction. The reservoirs or channels may be registered with each other, as shown in FIG. 12A. However, other embodiments include adhesive layers in which the structured surfaces are not registered with each other. Each structured surface may have a different pattern of structures.

Referring to FIG. 12B, a method is shown for fabricating the multi-layer construction depicted in FIG. 7. The method involves first applying an adhesive 901 to a molding tool 997 as described above (FIG. 9A) generating a structured adhesive 910. An laminate 905 (FIG. 9C) is then laminated to a first major surface 912 of the structured adhesive 910. The multi-layer laminate 800 is subsequently removed from the molding tool 997 to generate the laminate 800 with reservoirs or channels 840. The method may further involve laminating a non-structured adhesive onto a structured adhesive surface 996 of the multi-layer laminate 800.

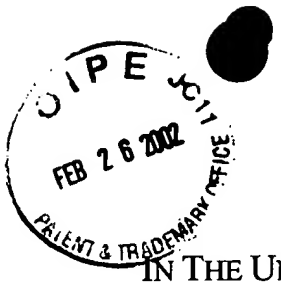
Referring to FIG. 12C, a method is shown for fabricating the multi-layer construction depicted in FIG. 6B. The method includes laminating together the exposed structured major surfaces 912A and 912B of two adhesive coated articles having the construction 905 (FIG. 9C), with included backings 920A and 920B. The resulting multi-layer adhesive coated article 850 includes a plurality of encapsulated reservoirs or channels 890 within the construction. The backing 920B is subsequently removed to reveal a non-structured, exposed surface 999 for adhering to a target substrate.

Additional membrane layers, transfer liners, release liners, adhesive layers (structured and non-structured), and the like, can be laminated to one or both sides of the adhesive constructions of the invention using lamination techniques that are well known to those skilled in the art.

Methods for filling the reservoirs in the constructions of the invention (such as construction 102 depicted in FIG. 1) include dipping, spraying, coating, sonicating, or powdering an intermediate laminate 905 (such as depicted in FIG. 9C) with liquid or solid. Subsequent lamination of laminate 905 to a cap layer encapsulates the material within the reservoirs of the construction. Fluid filling of constructions in which a cap layer 100 has already been applied to the structured surface, such as depicted in FIG. 1, can be accomplished by several means. Application of a pressure gradient can be used to load a fluid (such as a liquid containing a desired deliverable or non-deliverable substance) into the channels while displacing the air. This may be accomplished by simple mechanical means using, for example, a syringe/plunger. A particularly advantageous method of applying such a pressure gradient to fill the channels is by application of centrifugal force. If desired, venting may be supplied at the down stream (low pressure) ends of the channels such that air is displaced out of the channels as the fluid is introduced at the high pressure end. Conversely, centrifugal loading may be utilized in the absence of venting, such that the air is displaced countercurrent to the liquid being inserted. In this case the expelled air may be vented out through the same entry port via which the loading fluid is introduced.

Another means of filling channels with liquids in configurations including encapsulated reservoirs is through use of vacuum. Air may be evacuated from the channels until a sufficiently low pressure is reached, after which a liquid at a higher pressure (typically atmospheric) is brought into communication with the channels. Under this pressure differential, the liquid then fills the channels. This approach is especially suitable in cases in which venting is absent; that is, in which the only opening into the device is through the filling (liquid entry) port.

The reservoirs or channels of a construction, such as, for example construction 905, can be filled with deliverable and/or non-deliverable substances. Generally, the substance(s) is loaded into the exposed reservoirs or channels of the construction, followed by lamination of another structured or non-structured layer adhesive or non-adhesive layer. Upon lamination, the substance(s) are encapsulated within the reservoirs or channels of the



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Redlined Replacement Pages

(Courtesy Copy for the Examiner's Review)

and the like. Depending on the type of adhesive, the adhesive may be solidified or physically cross-linked upon cooling the laminate to room temperature. After curing, cross-linking, or solidifying the adhesive, the structures on the surface of the adhesive layer substantially retain their shape over time. The selection of the adhesive plays a role in determining the long-term properties of the structured adhesive layer(s). The process can be scaled up as a continuous process utilizing the methods described in U.S. Patent No. 6,123,890.

Additional membrane layers, transfer liners, release liners, adhesive layers (structured and non-structured), polymer films (structured and non-structured), and the like, can be laminated to the adhesive construction using lamination techniques that are well known to those skilled in the art.

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FIGS. 9-11 show two general methods for fabricating articles with encapsulated reservoirs or channels and non-structured surfaces for adhering to a substrate. FIG. 9 illustrates a method for making an adhesive layer for use in the constructions shown in FIGS. 10 and 11.

Referring to FIGS. 9A-9C, a structured adhesive layer 910 may be prepared by melting or extruding or solvent-coating an adhesive 901 onto a structured molding tool 997 and then laminating the structured adhesive 910 to a backing 920. Typically, a solventless adhesive 901 is pressed between the molding tool 997 and the backing 920 (e.g., a non-structured liner) under pressure at an elevated temperature such that the adhesive 901 flows. The press is cooled while maintaining pressure, and, as shown in FIG. 9B, the laminate 905 is subsequently removed from the molding tool 997 and cured or cross-linked using UV irradiation to generate the laminate 905 (FIG. 9C).

Referring to FIGS. 10A-10B, the ~~construction~~ laminate 905 can be further laminated to a cap layer 950 or to a non-structured adhesive layer to form an article 960 (FIG. 10B), which ~~includes~~ forms a plurality of encapsulated reservoirs or channels 970. If the cap layer 950 is a single structured adhesive layer, this method can be used to form the constructions illustrated in FIGS 6 and 7.

Referring to FIGS. 11A-11C, a method is shown that ~~involves providing~~ provides a ~~construction~~ laminate 905 including a backing 920 having a structured adhesive layer 910 thereon. The exposed adhesive surface ~~901~~ 910A is laminated to a cap layer 980, such as, for example, a primed polyester backing. The resulting laminate 990 is then removed from the original backing ~~layer~~ 920 (FIG. 11B), exposing a non-structured adhesive surface 925. The laminate 990 includes a non-structured adhesive surface ~~950~~ 925 suitable for contact with a substrate, a structured surface in contact with a cap layer ~~900~~980, and a plurality of encapsulated reservoirs or channels 975 (FIG. 11C). This basic construction can be further laminated to, for example, a single structured adhesive layer to form the construction illustrated in FIG. 6A.

Referring to FIG. 12A, a method is shown for fabricating the multi-layer construction depicted in FIG. 6A. The method includes laminating the ~~construction~~ laminate 990 (FIG. 11C) to a ~~construction~~ second laminate 905 (FIG. 10A), both made according to the methods described above. The resulting multi-layer adhesive coated article includes a plurality of reservoirs or channels ~~140~~ 940 within the article construction. The reservoirs or channels may be registered with each other, as shown in FIG. 12A. However, other embodiments include adhesive layers in which the structured surfaces are not registered with each other. Each structured surface may have a different pattern of structures.

Referring to FIG. 12B, a method is shown for fabricating the multi-layer construction depicted in FIG. 7. The method involves first applying an adhesive 901 to a molding tool 997 as described above (FIG. 9A) generating a structured adhesive 910. An ~~adhesive layer~~ laminate 905 (FIG. 9C) is then laminated to a first major surface 912 of the structured adhesive ~~901~~910. The multi-layer laminate 800 is subsequently removed from the molding tool 997 to generate the ~~construction~~ laminate 800 with reservoirs or channels 840. The method may further involve laminating a non-structured adhesive onto a structured adhesive surface 996 of the ~~construction~~ multi-layer laminate 800.

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construction. The backing 920B is subsequently removed to reveal a non-structured, exposed surface 999 for adhering to a target substrate.

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Another means of filling channels with liquids in configurations including encapsulated reservoirs is through use of vacuum. Air may be evacuated from the channels until a sufficiently low pressure is reached, after which a liquid at a higher pressure (typically atmospheric) is brought into communication with the channels. Under this pressure differential, the liquid then fills the channels. This approach is especially suitable in cases in which venting is absent; that is, in which the only opening into the device is through the filling (liquid entry) port.

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